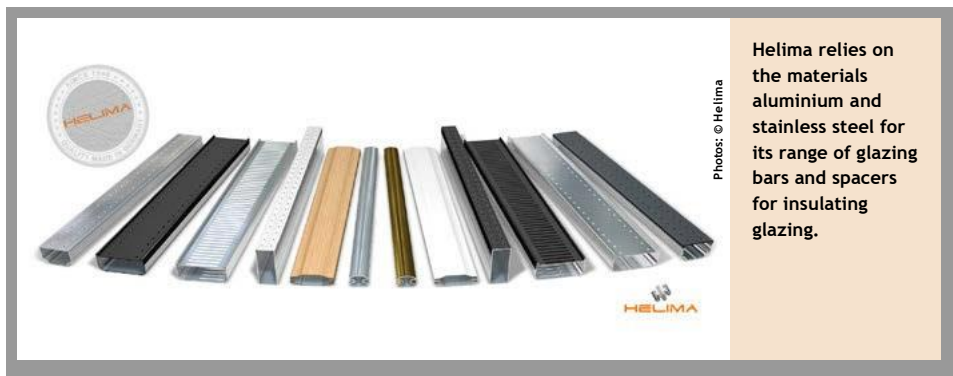


# Metal or plastic for the insulating edge?

Helima GmbH has been manufacturing high-quality insulating glass spacers and glazing bars for decades. From the company's point of view, the decision to consistently use single-component products made of aluminium and stainless steel is based on the following clear advantages of these materials over the alternatives made of plastic.



Although the warm edge spacers made of stainless steel have been a tried and tested product for decades, in recent years there has been a real hype about spacers made of plastic. The manufacturers of these products, but also window manufacturers, architects and building engineers have jumped on this bandwagon with the aim of ever better Psi values and have lost sight of the fact that this bandwagon is running full steam ahead, possibly in the wrong direction. Helima, too, has been intensively involved with plastic spacers as part of its own NoviTec product group which they offered on the market for a short time. The company has come to the firm conclusion that no plastic product available on the market can match the advantages of a stainless steel spacer in overall terms and, for this reason, Helima deliberately no longer offers plastic spacers. This realisation also resulted from the fact that manufacturers of components, as well as other stakeholders in the industry, are increasingly interpreting the requirements and standard values for spacer systems instead of focusing on long-term quality.

## tightness is a decisive advantage

An important factor in the choice of material for Helima is the experience that spacers

made of only one component, e.g. aluminium or stainless steel, make a significant contribution to the long-term functionality and durability of an insulating glass pane.

While spacers made of plastic require metallic foils or so-called multi-layer foils for sealing in order to keep the heat-insulating noble gases in the space between the panes, metallic spacers are inherently diffusion- and gas-tight – that last for decades. For this reason, Helima provides a lifetime guarantee for the gas-tightness of its single-component spacers made of aluminium and stainless steel.

## increased filling gas loss rates

A practical field study on the gas content of insulating glass units has shown that insulating glass units built between 1990 and 2005, in which mainly aluminium and stainless steel spacers were used, still have gas contents of between 87 and 91 percent. However, if we look at the past five to ten years, during which, according to the German Flat Glass Association, plastic spacer systems were used in 50 to 70% of insulating glass units, the gas loss rates are dramatic at up to 40 percent. Assuming that the primary and secondary sealants

and the gas filling rate have not changed significantly and the properties of the glass have improved, the only thing that has actually changed is the spacer used.

This leads to the conclusion that plastic spacers, in comparison to metallic spacers, cannot permanently hold the noble gases in the space between the panes and therefore do not represent a practical problem solution for thermal insulation in the long term. The already questionable advantage of the Psi value of plastic spacers, which is several thousandths better, thus loses much of its significance in practice, since the thermal insulation of an insulating glass pane is essentially achieved by the gas filling.

The gas loss rates for multicomponent spacers are quite understandable and logical. The reasons, well known in the industry, include micro-crack formation in the corners, the bond strength between the film, and the adhesion between the spacer and the secondary sealant. Metal single-component spacers made of stainless steel and aluminium also offer considerable advantages in terms of thermal linear expansion, UV resistance, heat resistance, stability and recyclability. The hype surrounding plastics can obviously not be explained by quality criteria. [www.helima.de](http://www.helima.de)

## The author



Bastian Breitenfellner is managing director of Helima GmbH, Wuppertal.